



BuyIt Prototype Testing Plan

by Janet David

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Abstract

This document is the fourth in a series of reports documenting the structured design process of BuyIt. As part of the Corporate Business Application Software System (C-BASS) suite of work flow and information management software, BuyIt automates small purchase orders for the U.S. Army Research Laboratory (ARL). The software testing plan developed in this document was derived from two antecedent documents: "BuyIt Software Requirement Analysis" and "BuyIt Detailed Design Report." The testing plan for BuyIt is delineated in the five major sections of this report: (1) "Usability Testing," (2) "Preparing for Usability Testing," (3) "Alpha Testing," (4) "Beta Testing," and (5) "User Testing Plan Task List." Together, they describe an overall strategy for testing as well as delineate the test cases to be used to demonstrate that the software works according to its specifications.

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1. Introduction

BuyIt is a component of the Corporate Business Application Software System (C-BASS) family of applications, an integrated set of Lotus Notes and Web-based software to support U.S. Army Research Laboratory (ARL) electronic workflow and task automation. The motivating force behind this project has been ARL downsizing and the findings put forth in the Business Process Reengineering (BPR) report on the small purchase process [1].

The purpose of the BuyIt prototype is to model a secure client/server system that provides for the processing of small purchase requests. This proof-of-principle prototype will alleviate some of the risks involved in implementing new technologies used to build the ARL Intranet. The project will also refine requirements described in the ARL Business Process Reengineering (BPR) "To-Be Model" [1].

1.1 The BuyIt Software Documentation Library. This report is the fourth in a series documenting the various phases of the development of the software system BuyIt Prototype. BuyIt, once implemented, will provide ARL with a secure, automated, and networked software system for preparing, routing, approving, tracking, and reporting the procurement of small purchases.

In keeping with the conventions of modern software engineering, BuyIt's design has been carefully documented. Three documents precede this software test plan:

- (1) "BuyIt Software Development Plan" [2] - defines the problem; gives an overview of technical, management, and reliability issues; and provides a detailed project schedule, including milestones.
- (2) "BuyIt Software Requirements Analysis" [3] - reports on the work accomplished to solidify user requirements and the analytical expansions used to derive a data flow model, a pseudocode representation of processing, and a data dictionary.

- (3) "BuyIt Detailed Design Report" [4] - finalizes the design of all data structures internal to each component and provides a representation of program logic at a relatively low level of abstraction using the formalisms of structure charts and module specifications.

1.2 Contents of This Document. BuyIt is currently designed as a prototype system to be implemented at the Adelphi Laboratory Center (ALC) in a Windows environment. The scope of the prototype is limited such that all workflow contingencies are not included at this time. Pending prototype approval, future enhancements will cover the full scope of the workflow process.

Using modern software engineering, testing is no longer a late-phase, random, or ad hoc event in the development process. Rather, the design characteristics of the software are used as a foundation for concurrently developing a coherent test plan. This report contains five major sections: (1) "Usability Testing," (2) "Preparing for Usability Testing," (3) "Alpha Testing," (4) "Beta Testing," and (5) "User Testing Plan Task List." Together, they describe an overall strategy for testing and delineate the test cases to be used to demonstrate that the software works according to its specifications.

2. Usability Testing

The purpose of the BuyIt prototype software application testing plan is to create an approach to systematically uncover different classes of errors in a minimum amount of time with a minimum amount of effort, thus verifying and validating that all BuyIt requirements function as stated in the software requirements analysis [3].

In a traditional test plan, two complementary points of view are taken in order to develop a complete set of module tests. In the first, the modules are treated as "black boxes." Test cases consist of input to the module, and evaluation consists of comparison of the output with expected results. The second perspective—"white boxes"—considers the internal workings of the

modules. From this perspective, test cases are derived from the control structure of the procedural design.

Because BuyIt is a Lotus Notes application, the standard testing techniques using white box testing and black box testing are adjusted. Since Lotus Notes applications are written using formulas and LotusScript and are not structured like traditional software programs, white box testing and black box testing are combined to form usability testing [5].

Usability testing attempts to find errors in categories such as (1) incorrect or missing functions, (2) human-machine or interface errors, (3) errors in data structures or external data base access, (4) performance errors, and (5) initialization and termination errors. Thus, in deriving a test plan, one looks first at the information domain and prescribed system tasks of the application.

As described in "BuyIt Software Requirements Analysis" [3], the high-level requirements for the prototype system to be tested include eight elements:

- (1) Security,
- (2) Purchase request preparation,
- (3) Automated request routing,
- (4) Electronic approval,
- (5) Receive/accept order,
- (6) Request tracking,
- (7) Legacy system interface, and
- (8) Reporting.

These high-level requirements are included in the BuyIt workflow and lend themselves to a scenario form of testing. As described in "BuyIt Software Requirements Analysis" [3], workflow comprises seven major business processes that provide an orderly approach for the user to test the functionality of BuyIt:

- (1) Prepare purchase request,
- (2) Approve funds,
- (3) Obtain approvals,
- (4) Edit purchase request,
- (5) Prepare purchase order,
- (6) Receive shipment, and
- (7) Submit inquiries.

Usability testing for BuyIt consists of two parts: alpha and beta testing. Alpha testing is done by the developer to assure that the overall design of the system performs as expected. Beta testing (or pilot testing) is done by a small group of users to ascertain that BuyIt functions as intended and that all instructions are clear. Additionally, this form of controlled field-testing validates that BuyIt will effectively and efficiently follow the users' cognitive processes in performing small-purchase functions.

3. Preparing for Usability Testing

The following is a checklist designed to assist the software developer in preparing BuyIt for usability testing.

- (1) Compose a clear list of tasks for the testers to perform. This list helps the developer isolate key functionality areas in the application and identify ways to improve these areas. Determine the time frame for the testing, the number of testers needed, and specify the level of understanding of Lotus Notes and the BuyIt process required.
- (2) Adjust the Access Control List (ACL) to include the testers with appropriate access and the necessary roles adding their names to the author access list.
- (3) Test BuyIt in the test database. Test the application of a single server. Do not create replicas at this stage.

- (4) Create the test database and refresh the test database from the development database. Save a copy of the template for the test database in the BuyIt system repository.
- (5) Test BuyIt on all intended platforms. For this prototype, the intended platform is Windows.
- (6) Create the BuyIt discussion database for tester feedback. This database is used to record errors found. Review the C-BASS Standard Configuration Management Plan [6] for more details on creating the discussion database.
- (7) Consider preventing the database from appearing in the Open Database dialog box. This option should be turned off before BuyIt is placed into full production. To enable testers to access BuyIt, send them a mail document with a button that adds BuyIt to their workspace.

4. Alpha Testing

Modern system engineering focuses on human-machine interaction as much as it does on the internal transactions of code modules. Thus, system designers must test for such ease-of-use attributes as user help, smooth navigation, and coherent information display [7–9]. To assure consistency of the user interface, BuyIt developers should perform usability tests, running through the use of every form, subform, view, navigator, and agent in BuyIt. The following segments detail nine system-specific features that must be tested.

4.1 Database Help. This on-line assistance within the application presents straightforward directions and answers questions, making it easy for the users to find the information they want and to navigate through the application.

Help in BuyIt is located in two areas: (1) the Help selection from the menu bar, and (2) the Instruction button in the action bar.

The Help selection from the menu bar contains the following options: "About This Database," "Using This Database," and "About Lotus Notes." The developer ensures that these options operate correctly and contain accurate, clear, and concise information.

The Instruction button provides designer/developer and user information on "Using the Approval Cycle." Again, the developer checks these documents to ascertain that the information is correct, concise, and clearly written. Some questions the developer should consider when creating the online help are:

- (1) Are the fields and buttons clearly labeled?
- (2) Are fields on the form arranged in a way that makes sense to the user and laid out on the form to facilitate movement through the form?
- (3) Are required fields and important information highlighted for the user?
- (4) Is it clear where to start in an application? Is it clear how the user is notified of progress in workflow applications such as BuyIt?
- (5) Are views and forms clearly named?
- (6) Are the "About Database" and "Using Database" forms filled out and edited for clarity?
- (7) Are all window titles and field help included where necessary?
- (8) Have declines been tested?
- (9) Have visual cues such as icons and color been exploited in a helpful but nondistracting way?

- (10) Are a name and a phone number provided in the event a user must contact a database manager?

4.2 Policy Documents. These are built-in documents that contain information that identifies the database and its use. Because these documents are also found in "Database Help," the procedures for checking their content have already been established. At this point, the developer need only ensure that the "About This Database" appears whenever a user logs onto BuyIt for the first time.

4.3 Database Icons. Database icons are square icons that represent a Lotus Notes database such as BuyIt. They contain pictures and descriptive titles. The developer checks that when the BuyIt icon is double-clicked, the BuyIt system appears.

4.4 Form Designs. A form is used to enter and to view data contained in documents. Documents are composed with a form and viewed with a specific form.

The developer ascertains that all Window titles for all forms, field alignment, field formulas, computed subforms under all conditions, author and read access lists, authors and readers fields, sections, and keyword fields are correct and function according to specifications.

To test BuyIt forms, the developer should:

- Select View > Design.
- Select Design then Forms in the Navigation pane. A list of all BuyIt forms appears.
- For each form, double-click to open it and then choose Design > Test Form.
- Verify that each form meets specifications.

To verify that each form meets specifications, the developer creates two or three documents and then uses the following checklist.

- (1) Is there a default form for the database? If not, double-click the form that should be the default and choose Design > Form Properties. Click the Defaults tab and select "Default database form."
- (2) Do all forms appear correctly on the Create menu? Are the appropriate keyboard shortcuts used? Do forms appear in the correct order? If not, check the names and the "Include in Menu" selections for the forms.
- (3) Do the window titles for each of the forms display appropriately under different conditions? If not, edit the window title formula. To display the window title when printing a form, click the Printing tab in the Form Properties InfoBox and add &W to the formula for the header or footer.
- (4) Check cross-platform compatibility, if applicable. Are all fonts used in this form available or approximated on all platforms? Does all text display legibly? Are platform-specific terms used where appropriate? Keep the application's layout as generic as possible to suit all platforms.
- (5) Are related fields grouped together on the form? If not, move the fields and their related static text to a more suitable position.
- (6) Do forms that are longer than one page have page numbers? If not, click the Printing tab in the Form Properties InfoBox and add &P to the formula for the header or footer.
- (7) Do the forms include Author Names fields where appropriate for tracking document authors and editors? If not, add an Author names field to the form.
- (8) If needed, has a "read access list" been defined for the form? This is defined by assigning names to a Read access control list in the Form Properties InfoBox.

- (9) If needed, has a “create access list” been defined for the form? This is defined by assigning names to a Compose access control list in the Form Properties InfoBox.

4.5 Field Designs. The developer needs to review the fields on each form and their formulas. Fields are checked for the following.

- (1) Are fields, including keywords, showing the correct information when first displayed? If not, check the default value formula.
- (2) Does every editable field have a help description? If not, add help descriptions for those fields. Ensure that field descriptions are consistently worded and that ending punctuation is consistent for each.
- (3) Can users enter information in editable fields? If not, check the field definition; a Computed option could have been wrongly selected when defining the field.
- (4) Are editable fields formatted correctly once the document is saved? If not, check the input translation formula and the format for the field.
- (5) Are editable fields accepting invalid data or not accepting valid data? If so, check the input validation formula.
- (6) Are computed fields computed correctly? Are they returning values of the appropriate data type? If not, check the field formula and do data type conversion as needed.
- (7) Do inherited fields inherit their data correctly? If not, check the field’s default value formula.

- (8) Do required fields have input validation formulas that display an appropriate message when the user tries to save the document without filling in the fields? If not, create the input validation formulas and include an explanatory message for the user.
- (9) In time-date fields, is the time displayed correctly? If not, ensure that the appropriate time zone option is selected from the field format dialog box.
- (10) Are fields aligned properly with a variety of window sizes and on different monitors? If not, check the tab settings for the form.
- (11) Are encrypted fields accessible to those with the encryption key and inaccessible to other users? If not, check to ensure that the encryption key was sent to all the right users. If users who should not have access to encrypted fields do have access, change the encryption key and resend it.

4.6 View Designs. A view is a tabular display of all or of a subset of documents in a database. For each view in BuyIt (e.g., the Status Inquiry, Approval Pending, and Reports), the developer ensures that column justification, column formulas, read access, selection formulas, form formulas, view layout (hierarchical view), and document display are correct and function according to specifications. Views are checked for the following.

- (1) Is there a default view for the database? If not, double-click the view that should be the default and choose Design > View Properties. Click the Options tab and select "Default view when database is first opened."
- (2) Is there a View by Date? If not, consider adding a view that sorts documents by date so users can view documents in chronological order.

- (3) Do all views appear correctly on the View menu? Are the appropriate keyboard shortcuts used? Do the views appear in the correct order? If not, check the names and the “Show in View Menu” selection in the View Properties InfoBox.
- (4) Is the information in the view easy to read? If it appears cluttered or if the columns are too close together, reset the column width and justification.
- (5) Are all the documents that should be in the view displayed, or are there too many displayed? If the view is not displaying the documents intended, check the view’s selection formula.
- (6) Are the response documents indented, if required? If not, select “Show response documents in a hierarchy” on the Options tab of the View Properties InfoBox and create a column for responses.
- (7) Do response documents correspond to the correct main documents? If not, check the view’s selection formula; ensure that the responses-only column is placed directly to the left of the column that displays the main document information.
- (8) If the view uses categories, are the categories appearing correctly? If not, create a sorted, categorized column and use the name of the appropriate keyword field as its formula.
- (9) If there are form formulas, are documents selected for the view being displayed with the correct form? If not, check the form formula.
- (10) Check cross-platform compatibility, if applicable. Are all fonts used in the view available or approximated on all platforms? Are column widths sufficient for all platforms? Are platform-specific terms used where appropriate? Make the application’s layout as generic as possible to suit all platforms.

- (11) If needed, has a read access list been defined for the view? If not, create it by selecting the Security tab in the View Properties InfoBox.
- (12) Is the information in each column correct? If not, check the formulas in the column definitions.
- (13) Is the column returning values of the appropriate data type? If not, check the field formula; columns can only display simple text, so @Text is needed in the formula to display values from numbers or time fields.
- (14) Is each column displaying all the information that is contained in it? If not, adjust the column width and/or the font used for displaying the column.
- (15) Are the contents of the columns aligned properly? Numbers should be right justified; text should be left justified or centered. Check the justification for each column.
- (16) Are documents in the right order? If not, check that the columns sorted on are the correct columns and that the correct sorting order was chosen.
- (17) Are the documents supposed to be numbered? If so, create a new view whose first column is sorting in ascending order and uses @DocNumber in its formula.

4.7 Agents. Agents are macros that are designed and programmed to process data and perform tasks on a subset of documents in a database. If the agent is complex or calls other agents, the developer should consider segmenting it into smaller agents to test different tasks individually before combining them.

Currently, there are no agents in BuyIt. Agents will be developed later for the interfaces to Standard Operations and Maintenance Army Research and Development System (SOMARDS) and to the Standard Army Automated Contracting System (SAACONS). The following procedures will apply once BuyIt agents are written.

While using the test database, the developer should execute each agent in Test and in Run. Test mode does not modify the document(s), but produces a report on how the agent functions. Run mode modifies the test document(s) so that the developer can measure the actual results.

To execute BuyIt agents in Test mode, the developer should:

- Select View > Agents. A list of all agents appears.
- For each agent, select the agent to test and choose Actions > Test.
- A test report appears stating the number of documents that the selected agent processes and what actions it performs on the document data.
- Verify that each agent's processes and actions are correct.

To execute BuyIt agents in Run mode, the developer should:

- Select View > Agents. A list of all agents appears.
- For each agent, select the agent to test and choose Actions > Run.
- Verify that the selected document(s) for each agent are modified as required.

4.8 Navigators. Navigators are graphical interface and design objects that allow users to navigate through a database and its data using hotspots.

- To quick-test a BuyIt navigator, the developer should:
- Select View > Design.
- Select Design and then Navigators in the Navigation pane. A list of all navigators appears.
- For each navigator, double-click the navigator to open it; then choose Design > Test Navigator.
- Verify that each navigator performs as required.

4.9 Application Performance. The developer weighs the advantages of implementing design features against tradeoffs in database performance. It is important to evaluate the speed at

which views and documents are displayed and to listen to the users' impressions of performance. Three areas that can easily bog down speed are the view display time, document display time, and formula and script run time.

To improve view display time, the developer checks that the following guidelines were used to create BuyIt views.

- Select specific documents for view, rather than use a selection formula such as `SELECT @ALL`.
- Simplify view selection formulas.
- Avoid using `@Today` and `@Now` because they must be recalculated each time the view is opened.
- Avoid cascading views because they slow down view regeneration.
- Avoid displaying unread marks at every level unless it's critical to the user.
- Reduce the number of views by adding columns that allow users to sort documents at will.
- Place categorized columns, sorted-uncategorized columns, and nonsorted columns in order from left to right.
- Use field values rather than formulas in columns.

To improve document display time, the developer checks that the following guidelines were used to create BuyIt documents.

- Avoid large bitmaps or graphics.
- Avoid the form property "Automatically refresh fields," use "Refresh fields on keyword change" or write a LotusScript field event.
- Avoid long tables with many computed fields.
- Use `@DbColumn` or `@DbLookup` formulas sparingly.
- Keep formulas for "hide when" conditions as simple as possible.
- Avoid recalculating fields if possible or change such fields to computed-when-composed fields.

- Set field values through Lotus Script form events rather than through conditional formulas in the field itself when appropriate.
- Minimize the number of fields, especially hidden fields, and use form events rather than field formulas to execute processing logic and avoid unnecessary recalculations.

To improve formula and script run time, the developer checks that the following guidelines were used to create BuyIt formulas and scripts.

- Replace long @function formulas with shorter LotusScript programs.
- Use LotusScript front-end UI classes only for form navigation and other user-interface simulations. Use the back-end database classes for data manipulation.
- Replace @V2If with @If in formulas when appropriate.
- Use @Prompt to prompt the user for information to narrow down the search when doing lookups with @functions.
- Use @Sum to add a set of numbers or number lists and to return the total rather than using longer formulas.
- Plan and design lookups to external data sources with performance and response time in mind.

5. Beta Testing

The best approach for beta-testing BuyIt for functionality is to test the system with a small group of users [10, 11]. This group of users should be composed of 6 to 12 testers who understand the workflow of a purchase request from an end user, procurement, budget, or logistics point of view. These testers need not have any experience using Lotus Notes. The duration of the testing phase is planned from 20 March 1997 through 14 April 1997.

The testers examine BuyIt by using a list of specific tasks designed to check the system's effectiveness, value, and proper function in regard to the high-level requirements identified in "BuyIt Software Requirements Analysis" [3]. Table 1 gives a brief description of the eight requirements identified as critical for an operational version of BuyIt.

Table 1. Functions to Be Validated Through Usability Testing

Function	Description
Security	Security provides measures to prevent unauthorized access to the system and its data; it ensures that authorized users can perform only the tasks allowed in their roles.
Purchase Request Preparation	Purchase request preparation provides a means for the requesters and functional users to enter and/or edit relevant information pertaining to a purchase request.
Automated Request Routing	Automated request routing provides a process that automatically directs a purchase request through a prearranged series of functional areas.
Electronic Approval	Electronic approval provides a methodology for approving officials and functional users to electronically approve or reject a purchase request.
Receive/Accept Order	Receive/accept an order provides a means for Receiving to notify requesters of shipment arrival and for the purchaser to accept or decline an order.
Request Tracking	Request tracking allows users to track the status of active purchase requests currently in the system.
Legacy System Interface	Legacy system interfaces implement automated interfaces to SOMARDS and SAACONS legacy systems.
Reporting	Reporting provides the users and management with a means for reporting cycle time and costs.

6. User Testing Plan Task List

Testing is the process of analyzing an application to detect the difference between existing and required conditions and to evaluate the features of the application [12, 13]. The testing is accomplished in an organized manner by employing a user testing plan task list. This list contains specific tasks that a user normally executes during the purchase request process cycle. These tasks are derived from the "BuyIt Software Requirements Analysis" [3], and the "BuyIt Detailed Design Report" [4]. The prototype environment is Windows; therefore, all tasks are directed toward the personal computer (PC) environment. The task flow follows the cognitive processes that a user employs when placing a purchase request.

Tasks are performed by its corresponding role(s) assigned to a user. The roles are requester, supervisor, budget analyst, other approver(s), contracting officer, property book officer, buyer, or receiver. During testing, as each task is executed, the user in the corresponding role assignment evaluates the results and either verifies that the task was accomplished successfully or reports the error via the BuyIt discussion database. Testing is successfully completed when the users in their corresponding roles have correctly executed all tasks.

Tasks are performed by the corresponding role assignments:

- Task 0.1 - all roles.
- Task 1.0 - requester.
- Task 2.0 - budget analyst.
- Task 3.0 - supervisor has full editing rights on all fields,
budget analyst has editing rights on fund source fields,
property book officer has editing rights on item tags,
contracting officer has editing rights on buyer assignment,
receiving has editing rights on item tags, and
other approver(s).
- Task 4.0 - requester.
- Task 5.0 - contracting officer and buyer.
- Task 6.0 - receiving.
- Task 7.0 - all roles.
- Task 8.0 - all roles.

See the Appendix for the task worksheets defined for each role. Each segment clearly presents the tasks and subtasks as a set of checklists for use in a field-test environment. The worksheets are suitable for photocopying. Thus, completed sets of usability test data can be collected, analyzed, and stored, providing feedback for system adjustment and enhancement at a later date.

6.1 Task 0.1: Log Onto BuyIt. Logon is used by all roles. The logon process provides security by allowing only authorized users to access the system via password protection.

This task is completed successfully when the user can log into BuyIt and display the BuyIt startup screen. The following checklist assists the user in determining if this task was accomplished successfully.

- (1) Does the user have a Lotus Notes icon on his/her desktop workspace?
- (2) Can the user log onto Lotus Notes using a password?
- (3) Does Lotus Notes only allow the user to enter a correct password?
- (4) Is there a BuyIt icon on the Lotus Notes workspace?
- (5) Can the user log onto BuyIt using a password?
- (6) Does BuyIt only allow the user to enter a correct password?
- (7) Does the "About This Database" appear when the user logs onto BuyIt for the first time?
- (8) Can the user display the BuyIt startup screen?

6.2 Task 1.0: Prepare Purchase Request. The user creates a new purchase request by clicking on the "Create New Request" button. When the "Purchase Request Entry" screen is displayed, some of the requester information is automatically displayed. The user enters the remaining requester information, item details, vendor information (if known at this time), and the date the items are required by. The fund source, delivery information, and attachment information complete the information for the request. The user submits the request to his/her supervisor. Supervisory approval puts the request into the procurement cycle.

This task is successfully completed when the user can correctly submit the purchase request to his/her designated supervisor for approval. Table 2 summarizes the subtasks of "Prepare Purchase Request," gives the role assigned to the subtask, and indicates the segment of this report that contains a checklist to assist the user in determining if this task was accomplished successfully.

Table 2. Subtasks for Prepare Purchase Request

Subtask	Role	Section Number
Create New Purchase Request	Requester	6.2.1
Fill in Purchase Request	Requester	6.2.2
Fill in Fund Source	Requester	6.2.3
Approve Purchase Request	Requester	6.2.4

6.2.1 Subtask 1.1: Create New Purchase Request.

- (1) Are the fields clearly labeled and easy to understand? (Please note that the field names used in this testing plan may not exactly match the field names that the user will see on the form.)
- (2) Are the fields arranged in a way that makes sense and follows the user's process for creating a purchase request?
- (3) Are the following Requester Info fields automatically displaying the correct user information?
 - Name - contains the user's name.
 - Office Symbol - contains the user's office symbol.
 - Phone - contains the user's telephone number.
 - Request Date - contains today's date.

6.2.2 Subtask 1.2: Fill in Purchase Request.

- (1) Can information be entered correctly into editable Requester Info fields?
 - Date Required - date formatted as MM/DD/YY.
 - Priority - a selected priority code.

- (2) Can information be entered correctly into editable Vendor Info fields?
 - Company Name - text field.
 - Phone No. - text field.
 - Address - text field.
 - Fax No. - text field.
 - City - text field.
 - State - text field.
 - Zip Code - text field.
 - Point of Contact (POC) - text field.

- (3) Is the Item No. automatically displaying the correct sequential number from 1 through 16?

- (4) Can information be entered correctly into editable Items fields?
 - Description - text field.
 - Tag - text field.
 - U.I. - selected unit of issue.
 - Unit Estimated Cost - numeric field with two decimal places.
 - Total Estimated Cost - numeric field with two decimal places.

- (5) Are the following Delivery information fields automatically displaying the correct user information?

- Name - contains the user's name.
- Phone Number - contains the user's telephone number.
- Bldg. - contains the user's location.
- Room Number - contains the user's room number.

(6) Can the user enter sole source justification information and/or item specifications in the Attachments information fields?

6.2.3 Subtask 1.3: Fill in Fund Source.

Can information be entered correctly into editable Funds source fields?

- Job No - text field.
- EOR - text field.

6.2.4 Subtask 1.4: Approve Purchase Request.

Can the completed purchase request be submitted to the user's supervisor by clicking the Submit button?

6.3 Task 2.0: Approve Funds. This major process interfaces to the SOMARDS legacy system and is transparent to the user. A "Build Block" process is executed at the start of the day and creates the transaction block used by BuyIt for that day. As certifiable purchase requests are created during the course of the day, the "Certify Funds" process queries SOMARDS and returns a message to either certify or reject the request. At the end of the day, the "Reconcile" process block is executed to balance the transaction block.

This task is successfully completed when the Accounting Classification field is completed (if there are sufficient funds) or when a rejection explanation is provided for insufficient funds or for an incorrect Job No. Table 3 lists the subtasks of "Approve Funds," gives the role assigned to

Table 3. Subtasks for Approve Funds

Subtask	Role	Section Number
Approve Fund Source	Budget Analyst	6.3.1
Approve Actual Cost	Budget Analyst	6.3.2
Certify Funds	Budget Analyst	6.3.3
Build Block	Budget Analyst	6.3.4
Reconcile	Budget Analyst	6.3.5

the subtask, and indicates the segment of this report that contains a checklist to assist the user in determining if this task was accomplished successfully.

6.3.1 Subtask 2.1: Approve Fund Source.

- (1) Does the Job No. field on the purchase request contain the correct information that corresponds to the Job No. assigned to the requester's organization?
- (2) Is the EOR correct and in correspondence with the items requested for purchase?

6.3.2 Subtask 2.2: Approve Actual Cost.

Does the Total Estimated Cost field contain the correct amount?

6.3.3 Subtask 2.3: Certify Funds

- (1) Does SOMARDS contain sufficient funds in the Job No. account to cover the amount contained in the Total Estimated Cost field?
- (2) If there are sufficient funds, is the purchase request certified by displaying the correct Accounting Classification number?

- (3) If there are insufficient funds, is the purchase request rejected by leaving the Accounting Classification field blank and by providing an explanation for the rejection?

6.3.4 Subtask 2.4: Build Block.

Is a correctly formatted transaction block built each day?

6.3.5 Subtask 2.5: Reconcile.

Is the transaction block correctly reconciled at the end of each day?

6.4 Task 3.0: Obtain Approvals. For each assigned role, a list of purchase requests is displayed on the BuyIt startup screen awaiting approval. By clicking on the Pending button, the user refreshes the startup screen to display any requests that require his/her action. The user then selects a request for approval. The user, as a supervisor or other approving official, may:

- Open a selected request.
- Review the request.
- Close the request and save the approval for later.
- Attach his/her approval to the request.
- Deny approval and enter an explanation.

Additionally, the property book officer attaches item tags to the individual items in order to flag them during receipt of the shipment. The Document Reference Number is automatically generated after the supervisor approves the request.

This task is successfully completed when the user, as the approving official, can successfully select a purchase request assigned to his/her role for approval, review the request, and attach his/her approval or rejection to a purchase request. Table 4 lists the subtasks of "Obtain

Table 4. Subtasks for Obtain Approvals

Subtask	Role	Section Number
Approve Special Items	<ul style="list-style-type: none">• Supervisor has full editing rights on all fields.• Budget analyst has editing rights on fund source fields.• Property book officer has editing rights on item tags.• Contracting officer has editing rights on buyer assignment.• Receiving has editing rights on item tags.	6.4.1
Attach Item Tag	Same as above.	6.4.2
Property Approval	Same as above.	6.4.3

Approvals,” gives the role assigned to the subtask, and indicates the segment of this report that contains a checklist to assist the user in determining if this task was accomplished successfully.

6.4.1 Subtask 3.1: Approve Special Items.

- (1) Is the information for each purchase request on the BuyIt startup screen easy to read?
- (2) Are all the requests displayed on the startup screen awaiting approval from the user's assigned role?
- (3) Are there any requests missing from the startup screen?
- (4) For each column on the startup screen, is the information for each request correct?
- (5) Is each column on the startup screen returning the correct data type values?

- (6) Is each column on the startup screen displaying all the information that is contained in it?
- (7) Are the contents of the columns on the startup screen aligned properly?
- (8) Are the purchase requests in the right order?
- (9) On the Approval screen, are the fields clearly labeled and easy to understand? Please note that the field names used in this testing plan may not exactly match the field names that the user will see on the form.
- (10) Are the fields arranged in a way that makes sense and facilitates movement through the form?
- (11) If in a supervisor role, can all fields be edited correctly?
- (12) After the supervisor approves the request, is a correct Document Reference Number automatically generated?
- (13) If in a budget analyst role, can only the fund source fields be edited correctly?
- (14) If in a contracting officer role, can only the buyer assignment be entered correctly?
- (15) Can the user close the request and save its approval for some later time?
- (16) Can the user deny approval and enter an explanation for denial?
- (17) Can the user approve the request?
- (18) If the request is denied, is it routed back to the requester?

(19) If the request is approved, is it routed to the next assigned approver?

6.4.2 Subtask 3.2: Attach Item Tag.

In a property book officer role, can only item tags be entered correctly and no other fields be edited?

6.4.3 Subtask 3.3: Property Approval.

In a receiving role, can only tag items be edited correctly?

6.5 Task 4.0: Edit Purchase Request. The rejected purchase request is returned to the requester. The user sees the request displayed on the BuyIt startup screen and selects the request for editing. The Purchase Request Entry screen is displayed so that the user can enter corrections. Depending on where the rejection came from and how far along the approval process the request has traveled, the user is only allowed to edit only certain fields within the request.

This task is successfully completed when the user can successfully correct the purchase request and submit the request for the remaining approvals. Table 5 lists the subtasks of "Edit Purchase Request," gives the role assigned to the subtask, and indicates the segment of this report that contains a checklist to assist the user in determining if this task was accomplished successfully.

Table 5. Subtasks for Edit Purchase Request

Subtask	Role	Section Number
Edit Rejected Purchase Request	Requester	6.5.1
Cancel Purchase Request	Requester	6.5.2

6.5.1 Subtask 4.1: Edit Rejected Purchase Request.

- (1) If the supervisor denied approval, can the user correctly edit all of the fields?
- (2) If the budget analyst denied certification, can the user correctly edit only the fund source fields?
- (3) If one of the approvers denied approval, can the user correctly edit only the fields related to the rejection?
- (4) If the contracting officer denies approval, can the user correctly edit Vendor, Item, or Attachment information related to the rejection?

6.5.2 Subtask 4.2: Cancel Purchase Request.

- (1) Can the user's supervisor cancel a purchase request?
- (2) Can the user cancel the purchase request?
- (3) Are no other approvers allowed to cancel the purchase request?

6.6 Task 5.0: Prepare Purchase Order. This task is successfully completed when the SAACONS information appears on the purchase request and when receiving is notified of the pending shipment. Table 6 lists the subtasks of "Prepare Purchase Order," indicates the role assigned to the subtask, and gives the segment of this report that contains a checklist to assist the user in determining if this task was accomplished successfully.

Table 6. Subtasks for Prepare Purchase Order

Subtask	Role	Section Number
Assign Buyer	Contracting Officer/Buyer	6.6.1
Approve Purchase	Contracting Officer/Buyer	6.6.2
Get Actual Cost	Contracting Officer/Buyer	6.6.3
Get Purchase Order	Contracting Officer/Buyer	6.6.4

6.6.1 Subtask 5.1: Assign the Buyer.

- (1) Has the contracting officer assigned a buyer for the purchase request?
- (2) Does the buyer information appear in the vendor information on the purchase request?

6.6.2 Subtask 5.2: Approve Purchase.

- (1) Has the selected buyer approved the purchase request?
- (2) Has the selected buyer created award information in SAACONS?
- (3) If the buyer denied approval, is the rejected request returned to the contracting officer?

6.6.3 Subtask 5.3: Get Actual Costs.

- (1) Was the correct award information downloaded from SAACONS to the purchase request?
- (2) Do the Actual Costs fields on the purchase request contain the correct amounts?

6.6.4 Subtask 5.4: Get Purchase Order. Has the completed purchase request been forwarded to receiving pending receipt of shipment?

6.7 Task 6.0: Receive Shipment. Sometime after the completed purchase request is forwarded to receiving, the shipment is delivered to the warehouse. Receiving marks the request as "received" and checks off any tagged items once they are properly accounted for. At this point, BuyIt notifies the requester of receipt and allows the user to accept or return items after they are delivered.

This task is successfully completed when receiving marks the request as received and checks off any tagged items, and when BuyIt notifies the user of receipt and allows the user to either accept or return the items. After the user accepts or returns the items, BuyIt marks the purchase request as closed. Table 7 lists the subtasks of "Receive Shipment," gives the role assigned to the subtask, and indicates the segment of this report that contains a checklist to assist the user in determining if this task was accomplished successfully.

Table 7. Subtasks for Receive Shipment

Subtask	Role	Section Number
Receive Order	Receiving	6.7.1
Tag Received Items	Receiving	6.7.2
Accept Shipment	Receiving	6.7.3

6.7.1 Subtask 6.1: Receive Order. Has receiving marked the request as correctly received?

6.7.2 Subtask 6.2: Tag Received Items. Has receiving properly accounted for all tagged items and correctly checked them off?

6.7.3 Subtask 6.3: Accept Shipment.

(1) Has BuyIt notified the requester of receipt of the purchase request?

(2) Does BuyIt allow the user to accept items?

(3) Does BuyIt allow the user to return items?

(4) After the user accepts or returns items, does BuyIt mark the purchase request as closed and remove it from the active system?

6.8 Task 7.0: Submit Inquiries. Clicking on the Status button displays the Status Inquiry screen. This screen lists the requests that were “touched” by the user either as a requester or as an approving official. Requests are listed by Document Reference Number and show the requester, current approval status, how long the request is in the current status, and the date required. By selecting a specific document, the user views all purchase request information available for that document. Additionally, the user cannot edit any information on these requests.

Clicking on the Reports button displays Reports screen. From this screen, the user can select the Cycle Time Report, request the Status as previously described, or go back to the previous menu. The Cycle Time report computes the average time a selected request waits for approval in the various functional areas.

This task is successfully completed when the user can review a selected purchase request on the Status Inquiry screen and can obtain a Cycle Time report for a selected purchase request from the Reports screen successfully. Table 8 lists the subtasks of “Submit Inquiries,” gives the role assigned to the subtask, and indicates the segment of this report that contains a checklist to assist the user in determining if this task was accomplished successfully.

Table 8. Subtasks for Submit Inquiries

Subtask	Role	Section Number
Show Inbox	All Roles	6.8.1
Show Report Request	All Roles	6.8.2
Show Status	All Roles	6.8.3
Generate Report	All Roles	6.8.4

6.8.1 Subtask 7.1: Show Inbox.

- (1) Is the Startup/Inbox User screen displayed after the user clicks on the Pending button?
- (2) Is the information for each purchase request displayed in the inbox easy to read?
- (3) Are all the requests displayed in the inbox awaiting approval from the user's assigned role?
- (4) Are there any requests missing from the inbox?
- (5) For each column in the inbox, is the information for each request correct?
- (6) Is each column in the inbox returning the correct data type values?
- (7) Is each column in the inbox displaying all of the information that is contained in it?
- (8) Are the contents of the columns in the inbox aligned properly?
- (9) Are the purchase requests in the right order?

6.8.2 Subtask 7.2: Show Report Request.

- (1) Can the user select and display any purchase request from the inbox?
- (2) Can the user only view and not edit the displayed purchase request?
- (3) On the Inquiry screen, are the fields clearly labeled and easy to understand? Please note that the field names used in this testing plan may not exactly match the field names that the user will see on the form.

- (4) Are the fields arranged in a way that makes sense?

6.8.3 Subtask 7.3: Show Status.

- (1) Is the Status Inquiry screen displayed after the user clicks on the Status button?
- (2) Is the information for each purchase request displayed on the Status Inquiry screen easy to read?
- (3) Are all the requests displayed on the Status Inquiry screen “touched” by the user in some manner?
- (4) Are there any requests missing from the Status Inquiry screen?
- (5) For each column on the screen, is the information for each request correct?
- (6) Is each column on the screen returning the correct data type values?
- (7) Is each column on the screen displaying all of the information that is contained in it?
- (8) Are the contents of the columns on the screen aligned properly?
- (9) Are the purchase requests in the right order?

6.8.4 Subtask 7.4: Generate Report.

- (1) Is the Cycle Time Report displayed after the user selects a purchase request and clicks on the Reports button?
- (2) Is the information displayed in the report easy to read?

- (3) Is the information in the report in the correct order?
- (4) For each column in the report, is the information correct?
- (5) Is each column in the report returning the correct data type values?
- (6) Is each column in the report displaying all of the information that is contained in it?
- (7) Are the contents of the columns in the report aligned properly?

6.9 Task 8.0: Exit BuyIt. Exiting BuyIt is used by all roles. The exit process ensures the system is properly closed and prevents any unauthorized person from gaining access to the system.

This task is completed successfully when the user can exit BuyIt and return to the PC's desktop workspace. The following checklist assists the user in determining if this task was accomplished successfully.

- By clicking on the "X" in the upper right-hand corner of the screen, does the user return to the PC's desktop workspace?

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7. References

1. Business Process Reengineering Project. "To-Be Model: Small Purchase." U.S. Army Research Laboratory, Aberdeen Proving Ground, MD, July 1995.
2. Ulery, D. L., B. Schallhorn, and W. S. Jernigan. "BuyIt Software Development Plan: A C-BASS Component." ARL-MR-443, U.S. Army Research Laboratory, Aberdeen Proving Ground, MD, May 1999.
3. Schallhorn, B. R., W. S. Jernigan, and D. L. Ulery. "BuyIt Prototype Software Requirements Analysis: A C-BASS Component." ARL-MR-444, U.S. Army Research Laboratory, Aberdeen Proving Ground, MD, May 1999.
4. Schallhorn, B. R. "BuyIt Detailed Design Report: A C-BASS Component." Technical Report, U.S. Army Research Laboratory, Aberdeen Proving Ground, MD, to be published.
5. Lotus Development Corp. "Lotus Notes Release 4 Application Developer's Guide." Cambridge, MA, 1995.
6. David, J. "C-BASS Standard Configuration Management Plan." BASS-CMP-97-110, U.S. Army Research Laboratory, Aberdeen Proving Ground, MD, 1997.
7. Pressman, R. *Software Engineering, A Practitioner's Approach*. New York: McGraw-Hill, Inc., 1992.
8. Kit, E. *Software Testing in the Real World*. New York: Addison-Wesley Publishing Co., 1996.
9. Oppen, S., and H. Fersko-Weiss. *Technology for Teams*. New York: Van Nostrand Reinhold, 1992.
10. Kerwein, E., and S. B. DeJean. *Foundations of Lotus Notes 4.0 Application Development*. Foster City, CA: IDG Books Worldwide, 1996.
11. Brown, K., K. Brown, F. Koutchouk, and K. Brown. *Mastering Lotus Notes 4*. Alameda, CA: Sybex Inc., 1996.
12. National Aeronautics and Space Administration. *Manager's Handbook for Software Development, Revision 1*. SEL-84-101, Goddard Space Flight Center, Greenbelt, MD, 1990.
13. Stacey, D. *Software Testing Techniques*. <http://hebb.cis.uoguelph.ca/~deb/27320/testing/testing.html>, 1995.

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Appendix:

BuyIt Task Worksheets for Defined Roles

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Requester Role

Task List for Testing BuyIt

Directions: The following tasks are to be performed by users to determine if BuyIt is working correctly and efficiently. These tasks are arranged according to a corresponding role assigned to a user. The user performs those tasks assigned to a role. The roles are requester, supervisor, budget analyst, other approver(s), contracting officer, property book officer, buyer, or receiving. As each task is executed, the user evaluates the results and either verifies that the task was accomplished successfully or reports the error via the BuyIt discussion database. Testing is successfully completed when the users in their corresponding roles have correctly executed all tasks.

Task 0.1: Log Onto BuyIt

Logon is used by all roles. The logon process provides security by allowing only authorized users access the system via password protection.

This task is completed successfully when the user can log into BuyIt and display the BuyIt startup screen. Table A-1 assists the user in determining if this task was accomplished successfully:

The user creates a new purchase request by clicking on the "Create New Request" button. When the "Purchase Request Entry" screen is displayed, some of the requester information is automatically displayed. The user enters the remaining requester information, item details, vendor information (if known at this time), and the date by which the items are required. The fund source, delivery information, and attachment information complete the information for the request. After submitting the request to the user's supervisor, the supervisory approval puts the request into the procurement cycle.

Table A-1. Task 1.0: Prepare Purchase Request

Task Number	Task	Yes	No
0.1.1	Does the user have a Lotus Notes icon on his/her desktop workspace?		
0.1.2	Can the user log onto Lotus Notes using a password?		
0.1.3	Does Lotus Notes only allow the user to enter a correct password?		
0.1.4	Is there a BuyIt icon on the Lotus Notes workspace?		
0.1.5	Can the user log onto BuyIt using a password?		
0.1.6	Does BuyIt only allow the user to enter a correct password?		
0.1.7	Does the "About This Database" appear when the user logs onto BuyIt for the first time?		
0.1.8	Can the user display the BuyIt startup screen?		

This task is successfully completed when the user can correctly submit the purchase request to his/her designated supervisor for approval. Tables A-2 through A-5 assist the user in determining if this task was accomplished successfully.

Table A-2. Subtask 1.1: Create New Purchase Request

Task Number	Task	Yes	No
1.1.1	Are the fields clearly labeled and easy to understand? Please note that the field names used in this testing plan may not exactly match the field names that the user will see on the form.		
1.1.2	Are the fields arranged in a way that makes sense and follow the user's process for creating a purchase request?		
1.1.3	For Requester Info, does the Name field automatically display the user's name?		
1.1.4	For Requester Info, does the Office Symbol field automatically display the user's office symbol?		
1.1.5	For Requester Info, does the Phone field automatically display the user's phone number?		
1.1.6	For Requester Info, does the Request Date field automatically display today's date?		

Table A-3. Subtask 1.2: Fill in Purchase Request

Task Number	Task	Yes	No
1.2.1	For Requester Info, can the information entered into the Date Required field be entered as a date formatted as MM/DD/YY?		
1.2.2	For Requester Info, can a selected priority code be entered into the Priority field?		
1.2.3	For Vendor Info, can text information be entered into the Company Name field?		
1.2.4	For Vendor Info, can text information be entered into the Phone No field?		
1.2.5	For Vendor Info, can text information be entered into the Address field?		
1.2.7	For Vendor Info, can text information be entered into the City field?		
1.2.8	For Vendor Info, can text information be entered into the State field?		
1.2.9	For Vendor Info, can text information be entered into the Zip Code field?		
1.2.10	For Vendor Info, can text information be entered into the POC field?		
1.2.11	Is the Item No automatically displaying the correct sequential number from 1 through 16?		
1.2.12	For Items information, can text information be entered into the Description field?		
1.2.13	For Items information, can text information be entered into the Tag field?		
1.2.14	For Items information, can a selected unit of issue be entered into the U.I. field?		
1.2.15	For Items information, can a number with two decimal places be entered into the Unit Estimated Cost field?		
1.2.16	For Items information, can a number with two decimal places be entered into the Total Estimated Cost field?		
1.2.17	For Delivery information, is the user's name automatically displayed in the Name field?		
1.2.18	For Delivery information, is the user's telephone number automatically displayed in the Phone Number field?		
1.2.19	For Delivery information, is the user's location automatically displayed in the Bldg field?		
1.2.20	For Delivery information, is the user's room number automatically displayed in the Room Number field?		
1.2.21	Can the user enter sole source justification information and/or item specifications in the Attachments information fields?		

Table A-4. Subtask 1.3: Fill in Fund Source

Task Number	Task	Yes	No
1.3.1	For Funds source, can text information be entered into the Job No field?		
1.3.2	For Funds source, can text information be entered into the EOR field?		

Table A-5. Subtask 1.4: Approve Purchase Request

Task Number	Task	Yes	No
1.4.1	Can the completed purchase request be submitted to the user's supervisor by clicking the Submit button?		

Task 4.0: Edit Purchase Request

The rejected purchase request is returned to the requester. The user sees the request displayed on the BuyIt startup screen and selects the request for editing. The Purchase request Entry screen is displayed so that the user can enter corrections. Depending on where the rejection came from and how far along the approval process the request has traveled, the user is only allowed to edit certain fields within the request.

This task is successfully completed when the user can successfully correct the purchase request and submit the request for the remaining approvals. Tables A-6 and A-7 assist the user in determining if this task was accomplished successfully.

Table A-6. Subtask 4.1: Edit Rejected Purchase Request

Task Number	Task	Yes	No
4.1.1	If the supervisor denied approval, can the user correctly edit all of the fields?		
4.1.2	If the budget analyst denied approval, can the user correctly edit only the fund source fields?		
4.1.3	If one of the approvers denied approval, can the user correctly edit only the fields related to the rejection?		
4.1.4	If the contracting officer denies approval, can the user correctly edit Vendor, Item, or Attachment information related to the rejection?		

Table A-7. Subtask 4.2: Cancel Purchase Request

Task Number	Task	Yes	No
4.2.1	Can the user's supervisor cancel a purchase request?		
4.2.2	Can the user cancel the purchase request?		
4.2.3	Are no other approvers allowed to cancel the purchase request?		

Task 7.0: Submit Inquiries

Clicking on the Status button displays the Status Inquiry screen. This screen lists the requests that were "touched" by the user either as a requester or as an approving official. Requests are listed by Document Reference Number and show the requester, current approval status, the length of time the request is in the current status, and the date required. By selecting a specific document, the user views all purchase request information available for that document. Also, the user cannot edit any information on these requests.

Clicking on the Reports button displays Reports screen. From this screen, the user can select the Cycle Time Report, request the Status as previously described, or go back to the previous menu. The Cycle Time report computes the average time a selected request waits for approval in the various functional areas.

This task is successfully completed when the user can review a selected purchase request on the Status Inquiry screen and can obtain a Cycle Time report for a selected purchase request from the Reports screen successfully. Tables A-8 through A-11 assist the user in determining if this task was accomplished successfully.

Table A-8. Subtask 7.1: Show Inbox

Task Number	Task	Yes	No
7.1.1	Is the Startup/Inbox User screen displayed after the user clicks on the Pending button?		
7.1.2	Is the information for each purchase request displayed in the inbox easy to read?		
7.1.3	Are all the requests displayed in the inbox awaiting approval from the user's assigned role?		
7.1.4	Are there any requests missing from the inbox?		
7.1.5	For each column in the inbox, is the information for each request correct?		
7.1.6	Is each column in the inbox returning the correct data type values?		
7.1.7	Is each column in the inbox displaying all of the information that is contained in it?		
7.1.8	Are the contents of the columns in the inbox aligned properly?		
7.1.9	Are the purchase requests in the right order?		

Table A-9. Subtask 7.2: Show Report Request

Task Number	Task	Yes	No
7.2.1	Can the user select and display any purchase request from the inbox?		
7.2.2	Can the user only view and not edit the displayed purchase request?		
7.2.3	On the Inquiry screen, are the fields clearly labeled and easy to understand? Please note that the field names used in this testing plan may not exactly match the field names that the user will see on the form.		
7.2.4	Are the fields arranged in a way that makes sense?		

Table A-10. Subtask 7.3: Show Status

Task Number	Task	Yes	No
7.3.1	Is the Status Inquiry screen displayed after the user clicks on the Status button?		
7.3.2	Is the information for each purchase request displayed on the Status Inquiry screen easy to read?		
7.3.3	Are all the requests displayed on the Status Inquiry screen "touched" by the user in some manner?		
7.3.4	Are there any requests missing from the Status Inquiry screen?		
7.3.5	For each column on the screen, is the information for each request correct?		
7.3.6	Is each column on the screen returning the correct data type values?		
7.3.7	Is each column on the screen displaying all of the information that is contained in it?		
7.3.8	Are the contents of the columns on the screen aligned properly?		
7.3.9	Are the purchase requests in the right order?		

Table A-11. Subtask 7.4: Generate Report

Task Number	Task	Yes	No
7.4.1	Is the Cycle Time Report displayed after the user selects a purchase request and clicks on the Reports button?		
7.4.2	Is the information displayed in the report easy to read?		
7.4.3	Is the information in the report in the correct order?		
7.4.4	For each column in the report, is the information correct?		
7.4.5	Is each column in the report returning the correct data type values?		
7.4.6	Is each column in the report displaying all of the information that is contained in it?		
7.4.7	Are the contents of the columns in the report aligned properly?		

Task 8.0: Exit BuyIt

Exiting BuyIt is used by all roles. The exit process ensures the system is properly closed and prevents any unauthorized person from gaining access to the system.

This task is completed successfully when the user can exit BuyIt and return to the PC's desktop workspace. Table A-12 assists the user in determining if this task was accomplished successfully.

Table A-12. Task 8.0: Exit BuyIt

Task Number	Task	Yes	No
8.0.1	By clicking on the "X" in the upper right-hand corner of the screen, does the user return to the PC's desktop workspace?		

Supervisor Role

Task List for Testing BuyIt

Directions: The following tasks are to be performed by users to determine if BuyIt is working correctly and efficiently. These tasks are arranged according to a corresponding role assigned to a user. The user performs those tasks assigned to a role. The roles are requester, supervisor, budget analyst, other approver(s), contracting officer, property book officer, buyer, or receiving. As each task is executed, the user evaluates the results and either verifies that the task was accomplished successfully or reports the error via the BuyIt discussion database. Testing is successfully completed when the users in their corresponding roles have correctly executed all tasks.

Task 0.1: Log Onto BuyIt

Logon is used by all roles. The logon process provides security by allowing only authorized users access the system via password protection.

This task is completed successfully when the user can log into BuyIt and display the BuyIt startup screen. Table A-13 assists the user in determining if this task was accomplished successfully.

Table A-13. Task 3.0: Obtain Approvals

Task Number	Task	Yes	No
0.1.1	Does the user have a Lotus Notes icon on his/her desktop workspace?		
0.1.2	Can the user log onto Lotus Notes using a password?		
0.1.3	Does Lotus Notes only allow the user to enter a correct password?		
0.1.4	Is there a BuyIt icon on the Lotus Notes workspace?		
0.1.5	Can the user log onto BuyIt using a password?		
0.1.6	Does BuyIt only allow the user to enter a correct password?		
0.1.7	Does the "About This Database" appear when the user Logs onto BuyIt for the first time?		
0.1.8	Can the user display the BuyIt startup screen?		

For each assigned role, a list of purchase requests is displayed on the BuyIt startup screen awaiting approval. By clicking on the Pending button, the user refreshes the startup screen to display any requests that require his/her action. The user then selects a request for approval. The user, as a supervisor or other approving official, may:

- open a selected request.
- review the request.
- close the request and save the approval for later.
- attach his/her approval to the request.
- Deny approval and enter an explanation.

Additionally, the property book officer attaches item tags to the individual items in order to flag them during receipt of the shipment. The Document Reference Number is automatically generated after the supervisor approves the request.

This task is successfully completed when the user, as the approving official, can successfully select a purchase request assigned to his/her role for approval, review the request, and attach his/her approval or rejection to a purchase request. Table A-14 assists the user in determining if this task was accomplished successfully.

Task 7.0: Submit Inquiries

Clicking on the Status button displays the Status Inquiry screen. This screen lists the requests that were “touched” by the user either as a requester or as an approving official. Requests are listed by Document Reference Number and show the requester, current approval status, the length of time the request is in the current status, and the date required. By selecting a specific document, the user views all purchase request information available for that document. Also, the user cannot edit any information on these requests.

Clicking on the Reports button displays Reports screen. From this screen, the user can select the Cycle Time Report, request the Status as previously described, or go back to the previous menu. The Cycle Time report computes the average time a selected request waits for approval in the various functional areas.

This task is successfully completed when the user can review a selected purchase request on the Status Inquiry screen and can obtain a Cycle Time report for a selected purchase request from the Reports screen successfully. Tables A-15 through A-18 assist the user in determining if this task was accomplished successfully.

Table A-14. Subtask 3.1: Approve Special Items

Task Number	Task	Yes	No
3.1.1	Is the information for each purchase request on the BuyIt startup screen easy to read?		
3.1.2	Are all the requests displayed on the startup screen awaiting approval from the user's assigned role?		
3.1.3	Are there any requests missing from the startup screen?		
3.1.4	For each column on the startup screen, is the information for each request correct?		
3.1.5	Is each column on the startup screen returning the correct data type values?		
3.1.6	Is each column on the startup screen displaying all the information that is contained in it?		
3.1.7	Are the contents of the columns on the startup screen aligned properly?		
3.1.8	Are the purchase requests in the right order?		
3.1.9	On the Approval screen, are the fields clearly labeled and easy to understand? Please note that the field names used in this testing plan may not exactly match the field names that the user will see on the form.		
3.1.10	Are the fields arranged in a way that makes sense and that facilitates movement through the form?		
3.1.11	If in a supervisor role, can all fields be edited correctly?		
3.1.12	After the supervisor approves the request, is a correct Document reference Number automatically generated?		
3.1.13	If in a budget analyst role, can only the fund source fields be edited correctly?	N/A	N/A
3.1.14	If in a contracting officer role, can only the buyer assignment be entered correctly?	N/A	N/A
3.1.15	Can the user close the request and save its approval for some later time?		
3.1.16	Can the user deny approval and enter an explanation for denial?		
3.1.17	Can the user approve the request?		
3.1.18	If the request is denied, is it routed back to the requester?		
3.1.19	If the request is approved, is it routed to the next assigned approver?		

Table A-15. Subtask 7.1: Show Inbox

Task Number	Task	Yes	No
7.1.1	Is the Startup/Inbox User screen displayed after the user clicks on the Pending button?		
7.1.2	Is the information for each purchase request displayed in the inbox easy to read?		
7.1.3	Are all the requests displayed in the inbox awaiting approval from the user's assigned role?		
7.1.4	Are there any requests missing from the inbox?		
7.1.5	For each column in the inbox, is the information for each request correct?		
7.1.6	Is each column in the inbox returning the correct data type values?		
7.1.7	Is each column in the inbox displaying all of the information that is contained in it?		
7.1.8	Are the contents of the columns in the inbox aligned properly?		
7.1.9	Are the purchase requests in the right order?		

Table A-16. Subtask 7.2: Show Report Request

Task Number	Task	Yes	No
7.2.1	Can the user select and display any purchase request from the inbox?		
7.2.2	Can the user only view and not edit the displayed purchase request?		
7.2.3	On the Inquiry screen, are the fields clearly labeled and easy to understand? Please note that the field names used in this testing plan may not exactly match the field names that the user will see on the form.		
7.2.4	Are the fields arranged in a way that makes sense?		

Table A-17. Subtask 7.3: Show Status

Task Number	Task	Yes	No
7.3.1	Is the Status Inquiry screen displayed after the user clicks on the Status button?		
7.3.2	Is the information for each purchase request displayed on the Status Inquiry screen easy to read?		
7.3.3	Are all the requests displayed on the Status Inquiry screen “touched” by the user in some manner?		
7.3.4	Are there any requests missing from the Status Inquiry screen?		
7.3.5	For each column on the screen, is the information for each request correct?		
7.3.6	Is each column on the screen returning the correct data type values?		
7.3.7	Is each column on the screen displaying all of the information that is contained in it?		
7.3.8	Are the contents of the columns on the screen aligned properly?		
7.3.9	Are the purchase requests in the right order?		

Table A-18. Subtask 7.4: Generate Report

Task Number	Task	Yes	No
7.4.1	Is the Cycle Time Report displayed after the user selects a purchase request and clicks on the Reports button?		
7.4.2	Is the information displayed in the report easy to read?		
7.4.3	Is the information in the report in the correct order?		
7.4.4	For each column in the report, is the information correct?		
7.4.5	Is each column in the report returning the correct data type values?		
7.4.6	Is each column in the report displaying all of the information that is contained in it?		
7.4.7	Are the contents of the columns in the report aligned properly?		

Task 8.0: Exit BuyIt

Exiting BuyIt is used by all roles. The exit process ensures the system is properly closed and prevents any unauthorized person from gaining access to the system.

This task is completed successfully when the user can exit BuyIt and return to the PC's desktop workspace. Table A-19 assists the user in determining if this task was accomplished successfully.

Table A-19. Task 8.0: Exit BuyIt

Task Number	Task	Yes	No
8.0.1	By clicking on the "X" in the upper right-hand corner of the screen, does the user return to the PC's desktop workspace?		

Budget Analyst Role

Task List for Testing BuyIt

Directions: The following tasks are to be performed by users to determine if BuyIt is working correctly and efficiently. These tasks are arranged according to a corresponding role assigned to a user. The user performs those tasks assigned to a role. The roles are requester, supervisor, budget analyst, other approver(s), contracting officer, property book officer, buyer, or receiving. As each task is executed, the user evaluates the results and either verifies that the task was accomplished successfully or reports the error via the BuyIt discussion database. Testing is successfully completed when the users in their corresponding roles have correctly executed all tasks.

Task 0.1: Log Onto BuyIt

Logon is used by all roles. The logon process provides security by allowing only authorized users access the system via password protection.

This task is completed successfully when the user can log into BuyIt and display the BuyIt startup screen. Table A-20 assists the user in determining if this task was accomplished successfully.

Table A-20. Task 2.0: Approve Funds

Task Number	Task	Yes	No
0.1.1	Does the user have a Lotus Notes icon on his/her desktop workspace?		
0.1.2	Can the user log onto Lotus Notes using a password?		
0.1.3	Does Lotus Notes only allow the user to enter a correct password?		
0.1.4	Is there a BuyIt icon on the Lotus Notes workspace?		
0.1.5	Can the user log onto BuyIt using a password?		
0.1.6	Does BuyIt only allow the user to enter a correct password?		
0.1.7	Does the "About This Database" appear when the user logs onto BuyIt for the first time?		
0.1.8	Can the user display the BuyIt startup screen?		

This major process interfaces to the SOMARDS legacy system and is transparent to the user. A "Build Block" process is executed at the start of the day and creates the transaction block used by BuyIt for that day. As certifiable purchase requests are created during the course of the day, the "Certify Funds" process queries SOMARDS and returns a message to either certify or reject the request. At the end of the day, the "Reconcile" process block is executed to balance the transaction block.

This task is successfully completed when the Accounting Classification field is completed if there is sufficient funds or when a rejection explanation is provided for insufficient funds or for an incorrect Job No. Tables A-21 through A-25 assist the user in determining if this task was accomplished successfully.

Table A-21. Subtask 2.1: Approve Fund Source

Task Number	Task	Yes	No
2.1.1	Does the Job No field on the purchase request contain the correct information that corresponds to the Job No assigned to the requester's organization?		
2.1.2	Is the EOR correct and correspond to the items requested for purchase?		

Table A-22. Subtask 2.2: Approve Actual Cost

Task Number	Task	Yes	No
2.2.1	Does the Total Estimated Cost field contain the correct amount?		

Table A-23. Subtask 2.3: Certify Funds

Task Number	Task	Yes	No
2.3.1	Does SOMARDS contain sufficient funds in the Job No account to cover the amount contained in the Total Estimated Cost field?		
2.3.2	If there are sufficient funds, is the purchase request certified by displaying the correct Accounting Classification number?		
2.3.3	If there are insufficient funds, is the purchase request rejected by leaving the Accounting Classification field blank and by providing an explanation for the rejection?		

Table A-24. Subtask 2.4: Build Block

Task Number	Task	Yes	No
2.4.1	Is a correctly formatted transaction block built each day?		

Table A-25. Subtask 2.5: Reconcile

Task Number	Task	Yes	No
2.5.1	Is the transaction block correctly reconciled at the end of each day?		

Task 3.0: Obtain Approvals

For each assigned role, a list of purchase requests is displayed on the BuyIt startup screen awaiting approval. By clicking on the Pending button, the user refreshes the startup screen to display any requests that require his/her action. The user then selects a request for approval. The user, as a supervisor or other approving official, may:

- open a selected request.
- review the request.
- close the request and save the approval for later.
- attach his/her approval to the request.
- deny approval and enter an explanation.

Additionally, the property book officer attaches item tags to the individual items in order to flag them during receipt of the shipment. The Document Reference Number is automatically generated after the supervisor approves the request.

This task is successfully completed when the user, as the approving official, can successfully select a purchase request assigned to his/her role for approval, review the request, and attach his/her approval or rejection to a purchase request. The following checklist of subtasks in Table A-26 will assist the user in determining if this task was accomplished successfully.

Task 7.0: Submit Inquiries

Clicking on the Status button displays the Status Inquiry screen. This screen lists the requests that were “touched” by the user either as a requester or as an approving official. Requests are listed by Document Reference Number and show the requester, current approval status, the length of time the request is in the current status, and the date required. By selecting a specific document, the user views all purchase request information available for that document. Also, the user cannot edit any information on these requests.

Table A-26. Subtask 3.1: Approve Special Items

Task Number	Task	Yes	No
3.1.1	Is the information for each purchase request on the BuyIt startup screen easy to read?		
3.1.2	Are all the requests displayed on the startup screen awaiting approval from the user's assigned role?		
3.1.3	Are there any requests missing from the startup screen?		
3.1.4	For each column on the startup screen, is the information for each request correct?		
3.1.5	Is each column on the startup screen returning the correct data type values?		
3.1.6	Is each column on the startup screen displaying all the information that is contained in it?		
3.1.7	Are the contents of the columns on the startup screen aligned properly?		
3.1.8	Are the purchase requests in the right order?		
3.1.9	On the Approval screen, are the fields clearly labeled and easy to understand? Please note that the field names used in this testing plan may not exactly match the field names that the user will see on the form.		
3.1.10	Are the fields arranged in a way that makes sense and facilitates movement through the form?		
3.1.11	If in a supervisor role, can all fields be edited correctly?	N/A	N/A
3.1.12	After the supervisor approves the request, is a correct Document reference Number automatically generated?		
3.1.13	If in a budget analyst role, can only the fund source fields be edited correctly?		
3.1.14	If in a contracting officer role, can only the buyer assignment be entered correctly?	N/A	N/A
3.1.15	Can the user close the request and save its approval for some later time?		
3.1.16	Can the user deny approval and enter an explanation for denial?		
3.1.17	Can the user approve the request?		
3.1.18	If the request is denied, is it routed back to the requester?		
3.1.19	If the request is approved, is it routed to the next assigned approver?		

Clicking on the Reports button displays Reports screen. From this screen, the user can select the Cycle Time Report, request the Status as described previously, or go back to the previous menu. The Cycle Time report computes the average time a selected request waits for approval in the various functional areas.

This task is successfully completed when the user can review a selected purchase request on the Status Inquiry screen and obtain a Cycle Time report for a selected purchase request from the Reports screen successfully. Tables A-27 through A-30 assist the user in determining if this task was accomplished successfully.

Table A-27. Subtask 7.1: Show Inbox

Task Number	Task	Yes	No
7.1.1	Is the Startup/Inbox User screen displayed after the user clicks on the Pending button?		
7.1.2	Is the information for each purchase request displayed in the inbox easy to read?		
7.1.3	Are all the requests displayed in the inbox awaiting approval from the user's assigned role?		
7.1.4	Are there any requests missing from the inbox?		
7.1.5	For each column in the inbox, is the information for each request correct?		
7.1.6	Is each column in the inbox returning the correct data type values?		
7.1.7	Is each column in the inbox displaying all of the information that is contained in it?		
7.1.8	Are the contents of the columns in the inbox aligned properly?		
7.1.9	Are the purchase requests in the right order?		

Task 8.0: Exit BuyIt

Exiting BuyIt is used by all roles. The exit process ensures the system is properly closed and prevents any unauthorized person from gaining access to the system.

Table A-28. Subtask 7.2: Show Report Request

Task Number	Task	Yes	No
7.2.1	Can the user select and display any purchase request from the inbox?		
7.2.2	Can the user only view and not edit the displayed purchase request?		
7.2.3	On the Inquiry screen, are the fields clearly labeled and easy to understand? Please note that the field names used in this testing plan may not exactly match the field names that the user will see on the form.		
7.2.4	Are the fields arranged in a way that makes sense?		

Table A-29. Subtask 7.3: Show Status

Task Number	Task	Yes	No
7.3.1	Is the Status Inquiry screen displayed after the user clicks on the Status button?		
7.3.2	Is the information for each purchase request displayed on the Status Inquiry screen easy to read?		
7.3.3	Are all the requests displayed on the Status Inquiry screen "touched" by the user in some manner?		
7.3.4	Are there any requests missing from the Status Inquiry screen?		
7.3.5	For each column on the screen, is the information for each request correct?		
7.3.6	Is each column on the screen returning the correct data type values?		
7.3.7	Is each column on the screen displaying all of the information that is contained in it?		
7.3.8	Are the contents of the columns on the screen aligned properly?		
7.3.9	Are the purchase requests in the right order?		

This task is completed successfully when the user can exit BuyIt and return to the PC's desktop workspace. Table A-31 assists the user in determining if this task was accomplished successfully.

Table A-30. Subtask 7.4: Generate Report

Task Number	Task	Yes	No
7.4.1	Is the Cycle Time Report displayed after the user selects a purchase request and clicks on the Reports button?		
7.4.2	Is the information displayed in the report easy to read?		
7.4.3	Is the information in the report in the correct order?		
7.4.4	For each column in the report, is the information correct?		
7.4.5	Is each column in the report returning the correct data type values?		
7.4.6	Is each column in the report displaying all of the information that is contained in it?		
7.4.7	Are the contents of the columns in the report aligned properly?		

Table A-31. Subtask 8.0: Exit BuyIt

Task Number	Task	Yes	No
8.0.1	By clicking on the "X" in the upper right-hand corner of the screen, does the user return to the PC's desktop workspace?		

Contracting Officer and Buyer Role

Task List for Testing BuyIt

Directions: The following tasks are to be performed by users to determine if BuyIt is working correctly and efficiently. These tasks are arranged according to a corresponding role assigned to a user. The user performs those tasks assigned to a role. The roles are requester, supervisor, budget analyst, other approver(s), contracting officer, property book officer, buyer, or receiving. As each task is executed, the user evaluates the results and either verifies that the task was accomplished successfully or reports the error via the BuyIt discussion database. Testing is successfully completed when the users in their corresponding roles have correctly executed all tasks.

Task 0.1: Log Onto BuyIt

Logon is used by all roles. The logon process provides security by allowing only authorized users access the system via password protection.

This task is completed successfully when the user can log into BuyIt and display the BuyIt startup screen. Table A-32 assists the user in determining if this task was accomplished successfully.

Table A-32. Task 3.0: Obtain Approvals

Task Number	Task	Yes	No
0.1.1	Does the user have a Lotus Notes icon on his/her desktop workspace?		
0.1.2	Can the user log onto Lotus Notes using a password?		
0.1.3	Does Lotus Notes only allow the user to enter a correct password?		
0.1.4	Is there a BuyIt icon on the Lotus Notes workspace?		
0.1.5	Can the user log onto BuyIt using a password?		
0.1.6	Does BuyIt only allow the user to enter a correct password?		
0.1.7	Does the "About This Database" appear when the user logs onto BuyIt for the first time?		
0.1.8	Can the user display the BuyIt startup screen?		

For each assigned role, a list of purchase requests is displayed on the BuyIt startup screen awaiting approval. By clicking on the Pending button, the user refreshes the startup screen to display any requests that require his/her action. The user then selects a request for approval. The user, as a supervisor or other approving official may:

- open a selected request.
- review the request.
- close the request and save the approval for later.
- attach his/her approval to the request.
- deny approval and enter an explanation.

Additionally, the property book officer attaches item tags to the individual items in order to flag them during receipt of the shipment. The Document Reference Number is automatically generated after the supervisor approves the request.

This task is successfully completed when the user, as the approving official, can successfully select a purchase request assigned to his/her role for approval, review the request, and attach his/her approval or rejection to a purchase request. Table A-33 assists the user in determining if this task was accomplished successfully.

Task 5.0: Prepare Purchase Order

This major process interfaces to the SAACONS legacy system and is transparent to the user. The first step of the process is for the contracting officer to assign a buyer. This triggers the upload of the purchase request information to SAACONS. The buyer then proceeds to work within SAACONS. The second part of the SAACONS interface is the download of information (actual costs, selected vendor, delivery date, etc.). The request is forwarded to receiving in order to alert them of the pending shipment.

This task is successfully completed when the SAACONS information appears on the purchase request and when receiving is notified of the pending shipment. Tables A-34 through A-37 assist the user in determining if this task was accomplished successfully.

Table A-33. Subtask 3.1: Approve Special Items

Task Number	Task	Yes	No
3.1.1	Is the information for each purchase request on the BuyIt startup screen easy to read?		
3.1.2	Are all the requests displayed on the startup screen awaiting approval from the user's assigned role?		
3.1.3	Are there any requests missing from the startup screen?		
3.1.4	For each column on the startup screen, is the information for each request correct?		
3.1.5	Is each column on the startup screen returning the correct data type values?		
3.1.6	Is each column on the startup screen displaying all the information that is contained in it?		
3.1.7	Are the contents of the columns on the startup screen aligned properly?		
3.1.8	Are the purchase requests in the right order?		
3.1.9	On the Approval screen, are the fields clearly labeled and easy to understand? Please note that the field names used in this testing plan may not exactly match the field names that the user will see on the form.		
3.1.10	Are the fields arranged in a way that makes sense and that facilitates movement through the form?		
3.1.11	If in a supervisor role, can all fields be edited correctly?	N/A	N/A
3.1.12	After the supervisor approves the request, is a correct Document Reference Number automatically generated?		
3.1.13	If in a budget analyst role, can only the fund source fields be edited correctly?	N/A	N/A
3.1.14	If in a contracting officer role, can only the buyer assignment be entered correctly?		
3.1.15	Can the user close the request and save its approval for some later time?		
3.1.16	Can the user deny approval and enter an explanation for denial?		
3.1.17	Can the user approve the request?		
3.1.18	If the request is denied, is it routed back to the requester?		
3.1.19	If the request is approved, is it routed to the next assigned approver?		

Table A-34. Subtask 5.1: Assign the Buyer

Task Number	Task	Yes	No
5.1.1	Has the contracting officer assigned a buyer for the purchase request?		
5.1.2	Does the buyer information appear in the vendor information on the purchase request?		

Table A-35. Subtask 5.2: Approve Purchase

Task Number	Task	Yes	No
5.2.1	Has the selected buyer approved the purchase request?		
5.2.2	Has the selected buyer created award information in SAACONS?		
5.2.3	If the buyer denied approval, is the rejected request returned to the contracting officer?		

Table A-36. Subtask 5.3: Get Actual Costs

Task Number	Task	Yes	No
5.3.1	Was the correct award information downloaded from SAACONS to the purchase request?		
5.3.2	Do the Actual Costs fields on the purchase request contain the correct amounts?		

Table A-37. Subtask 5.4: Get Purchase Order

Task Number	Task	Yes	No
5.4.1	Has the completed purchase request been forwarded to receiving pending receipt of shipment?		

Task 7.0: Submit Inquiries

Clicking on the Status button displays the Status Inquiry screen. This screen lists the requests that were “touched” by the user either as a requester or as an approving official. Requests are listed by Document Reference Number and show the requester, current approval status, the length of time the request is in the current status, and the date required. By selecting a specific document, the user views all purchase request information available for that document. Also, the user cannot edit any information on these requests.

Clicking on the Reports button displays Reports screen. From this screen, the user can select the Cycle Time Report, request the Status as previously described, or go back to the previous menu. The Cycle Time report computes the average time a selected request waits for approval in the various functional areas.

This task is successfully completed when the user can review a selected purchase request on the Status Inquiry screen and obtain a Cycle Time report for a selected purchase request from the Reports screen successfully. Tables A-38 through A-41 assist the user in determining if this task was accomplished successfully.

Task 8.0: Exit BuyIt

Exiting BuyIt is used by all roles. The exit process ensures the system is properly closed and prevents any unauthorized person from gaining access to the system.

This task is completed successfully when the user can exit BuyIt and return to the PC’s desktop workspace. Table A-42 assists the user in determining if this task was accomplished successfully.

Table A-38. Subtask 7.1: Show Inbox

Task Number	Task	Yes	No
7.1.1	Is the Startup/Inbox User screen displayed after the user clicks on the Pending button?		
7.1.2	Is the information for each purchase request displayed in the inbox easy to read?		
7.1.3	Are all the requests displayed in the inbox awaiting approval from the user's assigned role?		
7.1.4	Are there any requests missing from the inbox?		
7.1.5	For each column in the inbox, is the information for each request correct?		
7.1.6	Is each column in the inbox returning the correct data type values?		
7.1.7	Is each column in the inbox displaying all of the information that is contained in it?		
7.1.8	Are the contents of the columns in the inbox aligned properly?		
7.1.9	Are the purchase requests in the right order?		

Table A-39. Subtask 7.2: Show Report Request

Task Number	Task	Yes	No
7.2.1	Can the user select and display any purchase request from the inbox?		
7.2.2	Can the user only view and not edit the displayed purchase request?		
7.2.3	On the Inquiry screen, are the fields clearly labeled and easy to understand? Please note that the field names used in this testing plan may not exactly match the field names that the user will see on the form.		
7.2.4	Are the fields arranged in a way that makes sense?		

Table A-40. Subtask 7.3: Show Status

Task Number	Task	Yes	No
7.3.1	Is the Status Inquiry screen displayed after the user clicks on the Status button?		
7.3.2	Is the information for each purchase request displayed on the Status Inquiry screen easy to read?		
7.3.3	Are all the requests displayed on the Status Inquiry screen "touched" by the user in some manner?		
7.3.4	Are there any requests missing from the Status Inquiry screen?		
7.3.5	For each column on the screen, is the information for each request correct?		
7.3.6	Is each column on the screen returning the correct data type values?		
7.3.7	Is each column on the screen displaying all of the information that is contained in it?		
7.3.8	Are the contents of the columns on the screen aligned properly?		
7.3.9	Are the purchase requests in the right order?		

Table A-41. Subtask 7.4: Generate Report

Task Number	Task	Yes	No
7.4.1	Is the Cycle Time Report displayed after the user selects a purchase request and clicks on the Reports button?		
7.4.2	Is the information displayed in the report easy to read?		
7.4.3	Is the information in the report in the correct order?		
7.4.4	For each column in the report, is the information correct?		
7.4.5	Is each column in the report returning the correct data type values?		
7.4.6	Is each column in the report displaying all of the information that is contained in it?		
7.4.7	Are the contents of the columns in the report aligned properly?		

Table A-42. Task 8.0: Exit BuyIt

Task Number	Task	Yes	No
8.0.1	By clicking on the "X" in the upper right-hand corner of the screen, does the user return to the PC's desktop workspace?		

Property Book Officer Role

Task List for Testing BuyIt

Directions: The following tasks are to be performed by users to determine if BuyIt is working correctly and efficiently. These tasks are arranged according to a corresponding role assigned to a user. The user performs those tasks assigned to a role. The roles are requester, supervisor, budget analyst, other approver(s), contracting officer, property book officer, buyer, or receiving. As each task is executed, the user evaluates the results and either verifies that the task was accomplished successfully or reports the error via the BuyIt discussion database. Testing is successfully completed when the users in their corresponding roles have correctly executed all tasks.

Task 0.1: Log Onto BuyIt

Logon is used by all roles. The logon process provides security by allowing only authorized users to access the system via password protection.

This task is completed successfully when the user can log into BuyIt and display the BuyIt startup screen. Table A-43 assists the user in determining if this task was accomplished successfully.

For each assigned role, a list of purchase requests is displayed on the BuyIt startup screen awaiting approval. By clicking on the Pending button, the user refreshes the startup screen to display any requests that require his/her action. The user then selects a request for approval. The user, as a supervisor or other approving official, may:

Table A-43. Task 3.0: Obtain Approvals

Task Number	Task	Yes	No
0.1.1	Does the user have a Lotus Notes icon on his/her desktop workspace?		
0.1.2	Can the user log onto Lotus Notes using a password?		
0.1.3	Does Lotus Notes only allow the user to enter a correct password?		
0.1.4	Is there a BuyIt icon on the Lotus Notes workspace?		
0.1.5	Can the user log onto BuyIt using a password?		
0.1.6	Does BuyIt only allow the user to enter a correct password?		
0.1.7	Does the "About This Database" appear when the user logs onto BuyIt for the first time?		
0.1.8	Can the user display the BuyIt startup screen?		

- open a selected request.
- review the request.
- close the request and save the approval for later.
- attach his/her approval to the request.
- deny approval and enter an explanation.

Additionally, the property book officer attaches item tags to the individual items in order to flag them during receipt of the shipment. The Document Reference Number is automatically generated after the supervisor approves the request.

This task is successfully completed when the user, as the approving official, can successfully select a purchase request assigned to his/her role for approval, review the request, and attach his/her approval or rejection to a purchase request. Tables A-44 and A-45 assist the user in determining if this task was accomplished successfully.

Table A-44. Subtask 3.1: Approve Special Items

Task Number	Task	Yes	No
3.1.1	Is the information for each purchase request on the BuyIt startup screen easy to read?		
3.1.2	Are all the requests displayed on the startup screen awaiting approval from the user's assigned role?		
3.1.3	Are there any requests missing from the startup screen?		
3.1.4	For each column on the startup screen, is the information for each request correct?		
3.1.5	Is each column on the startup screen returning the correct data type values?		
3.1.6	Is each column on the startup screen displaying all the information that is contained in it?		
3.1.7	Are the contents of the columns on the startup screen aligned properly?		
3.1.8	Are the purchase requests in the right order?		
3.1.9	On the Approval screen, are the fields clearly labeled and easy to understand? Please note that the field names used in this testing plan may not exactly match the field names that the user will see on the form.		
3.1.10	Are the fields arranged in a way that makes sense and that facilitates movement through the form?		
3.1.11	If in a supervisor role, can all fields be edited correctly?	N/A	N/A
3.1.12	After the supervisor approves the request, is a correct Document Reference Number automatically generated?		
3.1.13	If in a budget analyst role, can only the fund source fields be edited correctly?	N/A	N/A
3.1.14	If in a contracting officer role, can only the buyer assignment be entered correctly?	N/A	N/A
3.1.15	Can the user close the request and save its approval for some later time?		
3.1.16	Can the user deny approval and enter an explanation for denial?		
3.1.17	Can the user approve the request?		
3.1.18	If the request is denied, is it routed back to the requester?		
3.1.19	If the request is approved, is it routed to the next assigned approver?		

Table A-45. Subtask 3.2: Attach Item Tag

Task Number	Task	Yes	No
3.2.1	In a property book officer role, can only item tags be entered correctly and no other fields be edited?		

Task 7.0: Submit Inquiries

Clicking on the Status button displays the Status Inquiry screen. This screen lists the requests that were “touched” by the user either as a requester or as an approving official. Requests are listed by Document Reference Number and show the requester, current approval status, the length of time the request is in the current status, and the date required. By selecting a specific document, the user views all purchase request information available for that document. Also, the user cannot edit any information on these requests.

Clicking on the Reports button displays Reports screen. From this screen, the user can select the Cycle Time Report, request the Status as previously described, or go back to the previous menu. The Cycle Time report computes the average time a selected request waits for approval in the various functional areas.

This task is successfully completed when the user can review a selected purchase request on the Status Inquiry screen and obtain a Cycle Time report for a selected purchase request from the Reports screen successfully. Tables A-46 through A-49 assist the user in determining if this task was accomplished successfully.

Task 8.0: Exit BuyIt

Exiting BuyIt is used by all roles. The exit process ensures the system is properly closed and prevents any unauthorized person from gaining access to the system.

Table A-46. Subtask 7.1: Show Inbox

Task Number	Task	Yes	No
7.1.1	Is the Startup/Inbox User screen displayed after the user clicks on the Pending button?		
7.1.2	Is the information for each purchase request displayed in the inbox easy to read?		
7.1.3	Are all the requests displayed in the inbox awaiting approval from the user's assigned role?		
7.1.4	Are there any requests missing from the inbox?		
7.1.5	For each column in the inbox, is the information for each request correct?		
7.1.6	Is each column in the inbox returning the correct data type values?		
7.1.7	Is each column in the inbox displaying all of the information that is contained in it?		
7.1.8	Are the contents of the columns in the inbox aligned properly?		
7.1.9	Are the purchase requests in the right order?		

Table A-47. Subtask 7.2: Show Report Request

Task Number	Task	Yes	No
7.2.1	Can the user select and display any purchase request from the inbox?		
7.2.2	Can the user only view and not edit the displayed purchase request?		
7.2.3	On the Inquiry screen, are the fields clearly labeled and easy to understand? Please note that the field names used in this testing plan may not exactly match the field names that the user will see on the form.		
7.2.4	Are the fields arranged in a way that makes sense?		

Table A-48. Subtask 7.3: Show Status

Task Number	Task	Yes	No
7.3.1	Is the Status Inquiry screen displayed after the user clicks on the Status button?		
7.3.2	Is the information for each purchase request displayed on the Status Inquiry screen easy to read?		
7.3.3	Are all the requests displayed on the Status Inquiry screen "touched" by the user in some manner?		
7.3.4	Are there any requests missing from the Status Inquiry screen?		
7.3.5	For each column on the screen, is the information for each request correct?		
7.3.6	Is each column on the screen returning the correct data type values?		
7.3.7	Is each column on the screen displaying all of the information that is contained in it?		
7.3.8	Are the contents of the columns on the screen aligned properly?		
7.3.9	Are the purchase requests in the right order?		

Table A-49. Subtask 7.4: Generate Report

Task Number	Task	Yes	No
7.4.1	Is the Cycle Time Report displayed after the user selects a purchase request and clicks on the Reports button?		
7.4.2	Is the information displayed in the report easy to read?		
7.4.3	Is the information in the report in the correct order?		
7.4.4	For each column in the report, is the information correct?		
7.4.5	Is each column in the report returning the correct data type values?		
7.4.6	Is each column in the report displaying all of the information that is contained in it?		
7.4.7	Are the contents of the columns in the report aligned properly?		

This task is completed successfully when the user can exit BuyIt and return to the PC's desktop workspace. Table A-50 assists the user in determining if this task was accomplished successfully.

Table A-50. Task 8.0: Exit BuyIt

Task Number	Task	Yes	No
8.0.1	By clicking on the "X" in the upper right-hand corner of the screen, does the user return to the PC's desktop workspace?		

Receiving Role

Task List for Testing BuyIt

Directions: The following tasks are to be performed by users to determine if BuyIt is working correctly and efficiently. These tasks are arranged according to a corresponding role assigned to a user. The user performs those tasks assigned to a role. The roles are requester, supervisor, budget analyst, other approver(s), contracting officer, property book officer, buyer, or receiving. As each task is executed, the user evaluates the results and either verifies that the task was accomplished successfully or reports the error via the BuyIt discussion database. Testing is successfully completed when the users in their corresponding roles have correctly executed all tasks.

Task 0.1: Log Onto BuyIt

Logon is used by all roles. The logon process provides security by allowing only authorized users to access the system via password protection.

This task is completed successfully when the user can log onto BuyIt and display the BuyIt startup screen. Table A-51 assists the user in determining if this task was accomplished successfully.

Table A-51. Task 3.0: Obtain Approvals

Task Number	Task	Yes	No
0.1.1	Does the user have a Lotus Notes icon on his/her desktop workspace?		
0.1.2	Can the user log onto Lotus Notes using a password?		
0.1.3	Does Lotus Notes only allow the user to enter a correct password?		
0.1.4	Is there a BuyIt icon on the Lotus Notes workspace?		
0.1.5	Can the user log onto BuyIt using a password?		
0.1.6	Does BuyIt only allow the user to enter a correct password?		
0.1.7	Does the "About This Database" appear when the user logs onto BuyIt for the first time?		
0.1.8	Can the user display the BuyIt startup screen?		

For each assigned role, a list of purchase requests is displayed on the BuyIt startup screen awaiting approval. By clicking on the Pending button, the user refreshes the startup screen to display any requests that require his/her action. The user then selects a request for approval. The user, as a supervisor or other approving official, may:

- open a selected request.
- review the request.
- close the request and save the approval for later.
- attach his/her approval to the request.
- deny approval and enter an explanation.

Additionally, the property book officer attaches item tags to the individual items in order to flag them during receipt of the shipment. The Document Reference Number is automatically generated after the supervisor approves the request.

This task is successfully completed when the user, as the approving official, can successfully select a purchase request assigned to his/her role for approval, review the request, and attach his/her approval or rejection to a purchase request. Tables A-52 and A-53 assist the user in determining if this task was accomplished successfully.

Table A-52. Subtask 3.1: Approve Special Items

Task Number	Task	Yes	No
3.1.1	Is the information for each purchase request on the BuyIt startup screen easy to read?		
3.1.2	Are all the requests displayed on the startup screen awaiting approval from the user's assigned role?		
3.1.3	Are there any requests missing from the startup screen?		
3.1.4	For each column on the startup screen, is the information for each request correct?		
3.1.5	Is each column on the startup screen returning the correct data type values?		
3.1.6	Is each column on the startup screen displaying all the information that is contained in it?		
3.1.7	Are the contents of the columns on the startup screen aligned properly?		
3.1.8	Are the purchase requests in the right order?		
3.1.9	On the Approval screen, are the fields clearly labeled and easy to understand? Please note that the field names used in this testing plan may not exactly match the field names that the user will see on the form.		
3.1.10	Are the fields arranged in a way that makes sense and that facilitates movement through the form?		
3.1.11	If in a supervisor role, can all fields be edited correctly?	N/A	N/A
3.1.12	After the supervisor approves the request, is a correct Document Reference Number automatically generated?		
3.1.13	If in a budget analyst role, can only the fund source fields be edited correctly?	N/A	N/A
3.1.14	If in a contracting officer role, can only the buyer assignment be entered correctly?	N/A	N/A
3.1.15	Can the user close the request and save its approval for some later time?		
3.1.16	Can the user deny approval and enter an explanation for denial?		
3.1.17	Can the user approve the request?		
3.1.18	If the request is denied, is it routed back to the requester?		
3.1.19	If the request is approved, is it routed to the next assigned approver?		

Table A-53. Subtask 3.3: Property Approval

Task Number	Task	Yes	No
3.3.1	In a receiving role, can only tag items be edited correctly?		

Task 6.0: Receive Shipment

Sometime after the completed purchase request is forwarded to receiving, the shipment is delivered to the warehouse. Receiving marks the request as “received” and checks off any tagged items once they are properly accounted. At this point, BuyIt notifies the requester of receipt and allows the user to accept or return items after they are delivered.

This task is successfully completed when receiving marks the request as received and checks off any tagged items, and when BuyIt notifies the user of receipt and allows the user to either accept or return the items. After the user accepts or returns the items, BuyIt marks the purchase request as closed. Tables A-54 through A-56 assist the user in determining if this task was accomplished successfully.

Table A-54. Subtask 6.1: Receive Order

Task Number	Task	Yes	No
6.1.1	Has receiving marked the request as correctly received?		

Table A-55. Subtask 6.2: Tag Received Items

Task Number	Task	Yes	No
6.2.1	Has receiving properly accounted for all tagged items and correctly checked them off?		

Table A-56. Subtask 6.3: Accept Shipment

Task Number	Task	Yes	No
6.3.1	Has BuyIt notified the requester of receipt of the purchase request?		
6.3.2	Does BuyIt allow the user to accept items?		
6.3.3	Does BuyIt allow the user to return items?		
6.3.4	After the user accepts or returns items, does BuyIt mark the purchase request as closed and remove it from the active system?		

Task 7.0: Submit Inquiries

Clicking on the Status button displays the Status Inquiry screen. This screen lists the requests that were “touched” by the user either as a requester or as an approving official. Requests are listed by Document Reference Number and show the requester, current approval status, the length of time the request is in the current status, and the date required. By selecting a specific document, the user views all purchase request information available for that document. Also, the user cannot edit any information on these requests.

Clicking on the Reports button displays Reports screen. From this screen, the user can select the Cycle Time Report, request the Status as previously described, or go back to the previous menu. The Cycle Time report computes the average time a selected request waits for approval in the various functional areas.

This task is successfully completed when the user can review a selected purchase request on the Status Inquiry screen and obtain a Cycle Time report for a selected purchase request from the Reports screen successfully. Tables A-57 through A-60 assist the user in determining if this task was accomplished successfully.

Table A-57. Subtask 7.1: Show Inbox

Task Number	Task	Yes	No
7.1.1	Is the Startup/Inbox User screen displayed after the user clicks on the Pending button?		
7.1.2	Is the information for each purchase request displayed in the inbox easy to read?		
7.1.3	Are all the requests displayed in the inbox awaiting approval from the user's assigned role?		
7.1.4	Are there any requests missing from the inbox?		
7.1.5	For each column in the inbox, is the information for each request correct?		
7.1.6	Is each column in the inbox returning the correct data type values?		
7.1.7	Is each column in the inbox displaying all of the information that is contained in it?		
7.1.8	Are the contents of the columns in the inbox aligned properly?		
7.1.9	Are the purchase requests in the right order?		

Table A-58. Subtask 7.2: Show Report Request

Task Number	Task	Yes	No
7.2.1	Can the user select and display any purchase request from the inbox?		
7.2.2	Can the user only view and not edit the displayed purchase request?		
7.2.3	On the Inquiry screen, are the fields clearly labeled and easy to understand? Please note that the field names used in this testing plan may not exactly match the field names that the user will see on the form.		
7.2.4	Are the fields arranged in a way that makes sense?		

Table A-59. Subtask 7.3: Show Status

Task Number	Task	Yes	No
7.3.1	Is the Status Inquiry screen displayed after the user clicks on the Status button?		
7.3.2	Is the information for each purchase request displayed on the Status Inquiry screen easy to read?		
7.3.3	Are all the requests displayed on the Status Inquiry screen "touched" by the user in some manner?		
7.3.4	Are there any requests missing from the Status Inquiry screen?		
7.3.5	For each column on the screen, is the information for each request correct?		
7.3.6	Is each column on the screen returning the correct data type values?		
7.3.7	Is each column on the screen displaying all of the information that is contained in it?		
7.3.8	Are the contents of the columns on the screen aligned properly?		
7.3.9	Are the purchase requests in the right order?		

Table A-60. Subtask 7.4: Generate Report

Task Number	Task	Yes	No
7.4.1	Is the Cycle Time Report displayed after the user selects a purchase request and clicks on the Reports button?		
7.4.2	Is the information displayed in the report easy to read?		
7.4.3	Is the information in the report in the correct order?		
7.4.4	For each column in the report, is the information correct?		
7.4.5	Is each column in the report returning the correct data type values?		
7.4.6	Is each column in the report displaying all of the information that is contained in it?		
7.4.7	Are the contents of the columns in the report aligned properly?		

Task 8.0: Exit BuyIt

Exiting BuyIt is used by all roles. The exit process ensures the system is properly closed and prevents any unauthorized person from gaining access to the system.

This task is completed successfully when the user can exit BuyIt and return to the PC's desktop workspace. Table A-61 assists the user in determining if this task was accomplished successfully.

Table A-61. Task 8.0: Exit BuyIt

Task Number	Task	Yes	No
8.0.1	By clicking on the "X" in the upper right-hand corner of the screen, does the user return to the PC's desktop workspace?		

ADP Approver

Task List for Testing BuyIt

Directions: The following tasks are to be performed by users to determine if BuyIt is working correctly and efficiently. These tasks are arranged according to a corresponding role assigned to a user. The user performs those tasks assigned to a role. The roles are requester, supervisor, budget analyst, other approver(s), contracting officer, property book officer, buyer, or receiving. As each task is executed, the user evaluates the results and either verifies that the task was accomplished successfully or reports the error via the BuyIt discussion database. Testing is successfully completed when the users in their corresponding roles have correctly executed all tasks.

Task 0.1: Log Onto BuyIt

Logon is used by all roles. The logon process provides security by allowing only authorized users access the system via password protection.

This task is completed successfully when the user can log into BuyIt and display the BuyIt startup screen. Table A-62 will assist the user in determining if this task was accomplished successfully.

Table A-62. Task 3.0: Obtain Approvals

Task Number	Task	Yes	No
0.1.1	Does the user have a Lotus Notes icon on his/her desktop workspace?		
0.1.2	Can the user log onto Lotus Notes using a password?		
0.1.3	Does Lotus Notes only allow the user to enter a correct password?		
0.1.4	Is there a BuyIt icon on the Lotus Notes workspace?		
0.1.5	Can the user log onto BuyIt using a password?		
0.1.6	Does BuyIt only allow the user to enter a correct password?		
0.1.7	Does the "About This Database" appear when the user logs onto BuyIt for the first time?		
0.1.8	Can the user display the BuyIt startup screen?		

For each assigned role, a list of purchase requests is displayed on the BuyIt startup screen awaiting approval. By clicking on the Pending button, the user refreshes the startup screen to display any requests that require his/her action. The user then selects a request for approval. The user, as a supervisor or other approving official, may:

- open a selected request.
- review the request.
- close the request and save the approval for later.
- attach his/her approval to the request.
- deny approval and enter an explanation.

Additionally, the property book officer attaches item tags to the individual items in order to flag them during receipt of the shipment. The Document Reference Number is automatically generated after the supervisor approves the request.

This task is successfully completed when the user, as the approving official, can successfully select a purchase request assigned to his/her role for approval, review the request, and attach his/her approval or rejection to a purchase request. Table A-63 assists the user in determining if this task was accomplished successfully.

Task 7.0: Submit Inquiries

Clicking on the Status button displays the Status Inquiry screen. This screen lists the requests that were “touched” by the user either as a requester or as an approving official. Requests are listed by Document Reference Number and show the requester, current approval status, the length of time the request is in the current status, and the date required. By selecting a specific document, the user views all purchase request information available for that document. Also, the user cannot edit any information on these requests.

Clicking on the Reports button displays Reports screen. From this screen, the user can select the Cycle Time Report, request the Status as previously described, or go back to the previous menu. The Cycle Time report computes the average time a selected request waits for approval in the various functional areas.

This task is successfully completed when the user can review a selected purchase request on the Status Inquiry screen and obtain a Cycle Time report for a selected purchase request from the Reports screen successfully. Tables A-64 through A-67 assist the user in determining if this task was accomplished successfully.

Table A-63. Subtask 3.1: Approve Special Items

Task Number	Task	Yes	No
3.1.1	Is the information for each purchase request on the BuyIt startup screen easy to read?		
3.1.2	Are all the requests displayed on the startup screen awaiting approval from the user's assigned role?		
3.1.3	Are there any requests missing from the startup screen?		
3.1.4	For each column on the startup screen, is the information for each request correct?		
3.1.5	Is each column on the startup screen returning the correct data type values?		
3.1.6	Is each column on the startup screen displaying all the information that is contained in it?		
3.1.7	Are the contents of the columns on the startup screen aligned properly?		
3.1.8	Are the purchase requests in the right order?		
3.1.9	On the Approval screen, are the fields clearly labeled and easy to understand? Please note that the field names used in this testing plan may not exactly match the field names that the user will see on the form.		
3.1.10	Are the fields arranged in a way that makes sense and that facilitates movement through the form?		
3.1.11	If in a supervisor role, can all fields be edited correctly?	N/A	N/A
3.1.12	After the supervisor approves the request, is a correct Document Reference Number automatically generated?		
3.1.13	If in a budget analyst role, can only the fund source fields be edited correctly?	N/A	N/A
3.1.14	If in a contracting officer role, can only the buyer assignment be entered correctly?	N/A	N/A
3.1.15	Can the user close the request and save its approval for some later time?		
3.1.16	Can the user deny approval and enter an explanation for denial?		
3.1.17	Can the user approve the request?		
3.1.18	If the request is denied, is it routed back to the requester?		
3.1.19	If the request is approved, is it routed to the next assigned approver?		

Table A-64. Subtask 7.1: Show Inbox

Task Number	Task	Yes	No
7.1.1	Is the Startup/Inbox User screen displayed after the user clicks on the Pending button?		
7.1.2	Is the information for each purchase request displayed in the inbox easy to read?		
7.1.3	Are all the requests displayed in the inbox awaiting approval from the user's assigned role?		
7.1.4	Are there any requests missing from the inbox?		
7.1.5	For each column in the inbox, is the information for each request correct?		
7.1.6	Is each column in the inbox returning the correct data type values?		
7.1.7	Is each column in the inbox displaying all of the information that is contained in it?		
7.1.8	Are the contents of the columns in the inbox aligned properly?		
7.1.9	Are the purchase requests in the right order?		

Table A-65. Subtask 7.2: Show Report Request

Task Number	Task	Yes	No
7.2.1	Can the user select and display any purchase request from the inbox?		
7.2.2	Can the user only view and not edit the displayed purchase request?		
7.2.3	On the Inquiry screen, are the fields clearly labeled and easy to understand? Please note that the field names used in this testing plan may not exactly match the field names that the user will see on the form.		
7.2.4	Are the fields arranged in a way that makes sense?		

Table A-66. Subtask 7.3: Show Status

Task Number	Task	Yes	No
7.3.1	Is the Status Inquiry screen displayed after the user clicks on the Status button?		
7.3.2	Is the information for each purchase request displayed on the Status Inquiry screen easy to read?		
7.3.3	Are all the requests displayed on the Status Inquiry screen "touched" by the user in some manner?		
7.3.4	Are there any requests missing from the Status Inquiry screen?		
7.3.5	For each column on the screen, is the information for each request correct?		
7.3.6	Is each column on the screen returning the correct data type values?		
7.3.7	Is each column on the screen displaying all of the information that is contained in it?		
7.3.8	Are the contents of the columns on the screen aligned properly?		
7.3.9	Are the purchase requests in the right order?		

Table A-67. Subtask 7.4: Generate Report

Task Number	Task	Yes	No
7.4.1	Is the Cycle Time Report displayed after the user selects a purchase request and clicks on the Reports button?		
7.4.2	Is the information displayed in the report easy to read?		
7.4.3	Is the information in the report in the correct order?		
7.4.4	For each column in the report, is the information correct?		
7.4.5	Is each column in the report returning the correct data type values?		
7.4.6	Is each column in the report displaying all of the information that is contained in it?		
7.4.7	Are the contents of the columns in the report aligned properly?		

Task 8.0: Exit BuyIt

Exiting BuyIt is used by all roles. The exit process ensures the system is properly closed and prevents any unauthorized person from gaining access to the system.

This task is completed successfully when the user can exit BuyIt and return to the PC's desktop workspace. Table A-68 assists the user in determining if this task was accomplished successfully.

Table A-68. Task 8.0: Exit BuyIt

Task Number	Task	Yes	No
8.0.1	By clicking on the "X" in the upper right-hand corner of the screen, does the user return to the PC's desktop workspace?		

Glossary

- black box testing** - a testing methodology that attempts to derive sets of inputs that will fully exercise all of the functional requirements of a system.
- formulas** - macros created using Notes formula language that consist of @functions and @Commands; can be used in SmartIcons, replication formulas, agents, forms, fields, views, buttons, hotspots, actions, and navigators.
- hotspots** - graphics, text, or buttons in a form, document, or Navigator that when double-clicked carry out a task or specific action.
- LotusScript** - a Visual Basic-like programming language that allows developers to write scripts for accessing and manipulating Notes objects and interface; it includes a browser and debugger.
- pilot** - group of users representing the appropriate mix of functional areas who test the usability, effectiveness, and efficiency of a system and who recommend changes for improvements.
- repository** - a database that acts as the center for both accumulation and storage of software engineering information such as system versions.
- SAACONS** - Standard Army Automated Contracting System residing on an HP 9000 using a Progress database management system. This system provides a mechanism to update, maintain, and monitor all U.S. Army Research Laboratory small-purchase contracts. The functional proponent is the Procurement Office.
- SOMARDS** - Standard Operations and Maintenance Army Research and Development System residing at the megacenter in Rock Island, IL. This system is an automated finance and accounting system that provides fund control using a System-2000 database management system. The functional proponent is the Defense Finance and Accounting Service.
- template** - A Lotus Notes database design that can be used as a starting point for a new database.
- white box testing** - a test-case design method that uses the control structure of the procedural design to derive test cases.

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